

height of one or more existing structures, where FAA notification prior to such construction or alteration is required by part 17 of this chapter, must include the FCC Antenna Structure Registration Number(s) for the affected structure(s). If no such number has been assigned at the time the application is filed, the applicant must state in the application whether or not the antenna structure owner has notified the FAA of the proposed construction or alteration and applied to the FCC for an Antenna Structure Registration Number in accordance with part 17 of this chapter for the antenna structure in question.

(f) Construction permits are not required for U.S.-licensed space stations. Construction of such stations may commence, at the applicant's own risk, prior to grant of a license. Prior to commencing construction, however, applicants must notify the Commission in writing they plan to begin construction at their own risk.

(g) Except as set forth in paragraph (h) of this section, a launch authorization and station license (*i.e.*, operating authority) must be applied for and granted before a space station may be launched and operated in orbit. Request for launch authorization may be included in an application for space station license. However, an application for authority to launch and operate an on-ground spare satellite will be considered pursuant to the following procedures:

(1) Applications for launch and operation of an on-ground spare NGSO-like satellite will be considered pursuant to the procedures set forth in § 25.157, except as set forth in paragraph (g)(3) of this section.

(2) Applications for launch and operation of an on-ground spare GSO-like satellite will be considered pursuant to the procedures set forth in § 25.158, except as set forth in paragraph (g)(3) of this section.

(3) Neither paragraph (g)(1) nor (g)(2) of this section will apply in cases where the space station to be launched is determined to be an emergency replacement for a previously authorized space station that has been lost as a result of a launch failure or a catastrophic in-orbit failure.

(h) Licensees of Non-Geostationary Satellite Orbit (NGSO) satellite systems need not file separate applications to operate technically identical in-orbit spares authorized as part of a blanket license pursuant to § 25.114(e) or any other satellite blanket licensing provision in this part. However, the licensee shall notify the Commission within 30 days of bringing the in-orbit spare into operation, and certify that operation of this space station did not cause the licensee to exceed the total number of operating space stations authorized by the Commission, and that the licensee will operate the space station within the applicable terms and conditions of its license. These notifications must be filed electronically on FCC Form 312.

[56 FR 24016, May 28, 1991, as amended at 61 FR 4366, Feb. 6, 1996; 61 FR 9951, Mar. 12, 1996; 61 FR 55582, Oct. 28, 1996; 62 FR 5927, Feb. 10, 1997; 62 FR 64172, Dec. 4, 1997; 68 FR 51502, Aug. 27, 2003; 69 FR 47794, Aug. 6, 2004; 70 FR 32253, June 2, 2005]

§ 25.114 Applications for space station authorizations.

(a) A comprehensive proposal shall be submitted for each proposed space station on FCC Form 312, Main Form and Schedule S, together with attached exhibits as described in paragraph (d) of this section.

(b) Each application for a new or modified space station authorization must constitute a concrete proposal for Commission evaluation. Each application must also contain the formal waiver required by section 304 of the Communications Act, 47 U.S.C. 304. The technical information for a proposed satellite system specified in paragraph (c) of this section must be filed on FCC Form 312, Main Form and Schedule S. The technical information for a proposed satellite system specified in paragraph (d) of this section need not be filed on any prescribed form but should be complete in all pertinent details. Applications for all new space station authorizations must be filed electronically through the International Bureau Filing System (IBFS) in accordance with the applicable provisions of part 1, subpart Y of this chapter.

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(c) The following information shall be filed on FCC Form 312, Main Form and Schedule S:

(1) Name, address, and telephone number of the applicant;

(2) Name, address, and telephone number of the person(s), including counsel, to whom inquiries or correspondence should be directed;

(3) Type of authorization requested (*e.g.*, launch authority, station license, modification of authorization);

(4)(i) Radio frequencies and polarization plan (including beacon, telemetry, and telecommand functions), center frequency and polarization of transponders (both receiving and transmitting frequencies),

(ii) Emission designators and allocated bandwidth of emission, final amplifier output power (identify any net losses between output of final amplifier and input of antenna and specify the maximum EIRP for each antenna beam),

(iii) Identification of which antenna beams are connected or switchable to each transponder and TT&C function,

(iv) Receiving system noise temperature,

(v) The relationship between satellite receive antenna gain pattern and gain-to-temperature ratio and saturation flux density for each antenna beam (may be indicated on antenna gain plot),

(vi) The gain of each transponder channel (between output of receiving antenna and input of transmitting antenna) including any adjustable gain step capabilities, and

(vii) Predicted receiver and transmitter channel filter response characteristics.

(5) For satellites in geostationary-satellite orbit,

(i) Orbital location, or locations if alternatives are proposed, requested for the satellite,

(ii) The factors that support the orbital assignment or assignments proposed in paragraph (c)(5)(i) of this section,

(iii) Longitudinal tolerance or east-west station-keeping capability;

(iv) Inclination incursion or north-south station-keeping capability.

(6) For satellites in non-geostationary-satellite orbits,

(i) The number of space stations and applicable information relating to the number of orbital planes,

(ii) The inclination of the orbital plane(s),

(iii) The orbital period,

(iv) The apogee,

(v) The perigee,

(vi) The argument(s) of perigee,

(vii) Active service arc(s), and

(viii) Right ascension of the ascending node(s).

(7) For satellites in geostationary-satellite orbit, accuracy with which the orbital inclination, the antenna axis attitude, and longitudinal drift will be maintained;

(8) Calculation of power flux density levels within each coverage area and of the energy dispersal, if any, needed for compliance with § 25.208, for angles of arrival of 5°, 10°, 15°, 20°, and 25° above the horizontal;

(9) Arrangement for tracking, telemetry, and control;

(10) Physical characteristics of the space station including weight and dimensions of spacecraft, detailed mass (on ground and in-orbit) and power (beginning and end of life) budgets, and estimated operational lifetime and reliability of the space station and the basis for that estimate;

(11) A clear and detailed statement of whether the space station is to be operated on a common carrier basis, or whether non-common carrier transactions are proposed. If non-common carrier transactions are proposed, describe the nature of the transactions and specify the number of transponders to be offered on a non-common carrier basis;

(12) Dates by which construction will be commenced and completed, launch date, and estimated date of placement into service.

(13) The polarization information specified in §§ 25.210(a)(1), (a)(3), and (i), to the extent applicable.

(d) The following information in narrative form shall be contained in each application:

(1) General description of overall system facilities, operations and services;

(2) If applicable, the feeder link and inter-satellite service frequencies requested for the satellite, together with any demonstration otherwise required

by this chapter for use of those frequencies (see, *e.g.*, §§ 25.203(j) and (k));

(3) Predicted space station antenna gain contour(s) for each transmit and each receive antenna beam and nominal orbital location requested. These contour(s) should be plotted on an area map at 2 dB intervals down to 10 dB below the peak value of the parameter and at 5 dB intervals between 10 dB and 20 dB below the peak values, with the peak value and sense of polarization clearly specified on each plotted contour. For applications for geostationary orbit satellites, this information must be provided in the .gxt format.

(4) A description of the types of services to be provided, and the areas to be served, including a description of the transmission characteristics and performance objectives for each type of proposed service, details of the link noise budget, typical or baseline earth station parameters, modulation parameters, and overall link performance analysis (including an analysis of the effects of each contributing noise and interference source);

(5) Calculation of power flux density levels within each coverage area and of the energy dispersal, if any, needed for compliance with § 25.208; Calculation of power flux density levels within each coverage area and of the energy dispersal, if any, needed for compliance with § 25.208, for angles of arrival other than 5°, 10°, 15°, 20°, and 25° above the horizontal.

(6) Public interest considerations in support of grant;

(7) Applications for authorizations for fixed-satellite space stations shall also include the information specified in § 25.140;

(8) Applications for authorizations in the Mobile-Satellite Service in the 1545–1559/1646.5–1660.5 MHz frequency bands shall also provide all information necessary to comply with the policies and procedures set forth in Rules and Policies Pertaining to the Use of Radio Frequencies in a Land Mobile Satellite Service, 2 FCC Rcd 485 (1987) (Available at address in § 0.445 of this chapter.);

(9) Applications to license multiple space station systems in the non-voice, non-geostationary mobile-satellite

service under blanket operating authority shall also provide all information specified in § 25.142; and

(10) Applications for authorizations in the 1.6/2.4 GHz Mobile-Satellite Service shall also provide all information specified in § 25.143.

(11) In addition to a statement of whether the space station is to be operated on a common carrier basis, or whether non-common carrier transactions are proposed, as specified in paragraph (c)(11) of this section, satellite applications in the Direct Broadcast Satellite service must provide a clear and detailed statement of whether the space station is to be operated on a broadcast or non-broadcast basis.

(12) Applications for authorizations in the non-geostationary satellite orbit fixed-satellite service (NGSO FSS) in the bands 10.7 GHz to 14.5 GHz shall also provide all information specified in § 25.146.

(13) For satellite applications in the Direct Broadcast Satellite service, if the proposed system's technical characteristics differ from those specified in the Appendix 30 BSS Plans, the Appendix 30A feeder link Plans, Annex 5 to Appendix 30 or Annex 3 to Appendix 30A, each applicant shall provide:

(i) The information requested in Appendix 4 of the ITU's Radio Regulations. Further, applicants shall provide sufficient technical showing that the proposed system could operate satisfactorily if all assignments in the BSS and feeder link Plans were implemented.

(ii) Analyses of the proposed system with respect to the limits in Annex 1 to Appendices 30 and 30A.

(14) A description of the design and operational strategies that will be used to mitigate orbital debris, including the following information:

(i) A statement that the space station operator has assessed and limited the amount of debris released in a planned manner during normal operations, and has assessed and limited the probability of the space station becoming a source of debris by collisions with small debris or meteoroids that could cause loss of control and prevent post-mission disposal;

(ii) A statement that the space station operator has assessed and limited

the probability of accidental explosions during and after completion of mission operations. This statement must include a demonstration that debris generation will not result from the conversion of energy sources on board the spacecraft into energy that fragments the spacecraft. Energy sources include chemical, pressure, and kinetic energy. This demonstration should address whether stored energy will be removed at the spacecraft's end of life, by depleting residual fuel and leaving all fuel line valves open, venting any pressurized system, leaving all batteries in a permanent discharge state, and removing any remaining source of stored energy, or through other equivalent procedures specifically disclosed in the application;

(iii) A statement that the space station operator has assessed and limited the probability of the space station becoming a source of debris by collisions with large debris or other operational space stations. Where a space station will be launched into a low-Earth orbit that is identical, or very similar, to an orbit used by other space stations, the statement must include an analysis of the potential risk of collision and a description of what measures the space station operator plans to take to avoid in-orbit collisions. If the space station operator is relying on coordination with another system, the statement must indicate what steps have been taken to contact, and ascertain the likelihood of successful coordination of physical operations with, the other system. The statement must disclose the accuracy—if any—with which orbital parameters of non-geostationary satellite orbit space stations will be maintained, including apogee, perigee, inclination, and the right ascension of the ascending node(s). In the event that a system is not able to maintain orbital tolerances, *i.e.*, it lacks a propulsion system for orbital maintenance, that fact should be included in the debris mitigation disclosure. Such systems must also indicate the anticipated evolution over time of the orbit of the proposed satellite or satellites. Where a space station requests the assignment of a geostationary-Earth orbit location, it must assess whether there are any known satellites located

at, or reasonably expected to be located at, the requested orbital location, or assigned in the vicinity of that location, such that the station keeping volumes of the respective satellites might overlap. If so, the statement must include a statement as to the identities of those parties and the measures that will be taken to prevent collisions;

(iv) A statement detailing the post-mission disposal plans for the space station at end of life, including the quantity of fuel—if any—that will be reserved for post-mission disposal maneuvers. For geostationary-Earth orbit space stations, the statement must disclose the altitude selected for a post-mission disposal orbit and the calculations that are used in deriving the disposal altitude. The statement must also include a casualty risk assessment if planned post-mission disposal involves atmospheric re-entry of the space station. In general, an assessment should include an estimate as to whether portions of the spacecraft will survive re-entry and reach the surface of the Earth, as well as an estimate of the resulting probability of human casualty.

(e) Applicants requesting authority to launch and operate a system comprised of technically identical, non-geostationary satellite orbit space stations may file a single “blanket” application containing the information specified in paragraphs (c) and (d) of this section for each representative space station.

[68 FR 63997, Nov. 12, 2003, as amended at 69 FR 29901, May 26, 2004; 69 FR 47794, Aug. 6, 2004; 69 FR 54587, Sept. 9, 2004]

§ 25.115 Application for earth station authorizations.

(a)(1) *Transmitting earth stations.* Commission authorization must be obtained for authority to operate a transmitting earth station. Applications shall be filed electronically on FCC Form 312, Main Form and Schedule B, and include the information specified in § 25.130, except as set forth in paragraph (a)(2) of this section.